

Healthier Diets for All With Industrial Fortification & Biofortification

Concept Note



Unlocking Healthier Diets for All : Defeating Hidden Hunger

An estimated 2 billion people globally are affected by micronutrient deficiencies, with a third of all people, at the risk of at least one micronutrient deficiency.

These are deficiencies of vitamins like Vitamin A, essential for vision and good immune systems, or minerals like Iodine, that protect against irreversible brain damage.

Our diets are not diverse enough and some vitamins and minerals are only found in low concentrations or in some, less available foods.

Food-based approaches to tackling micronutrient deficiencies include improving the nutrient content of commonly consumed foods.

By 2050, we will reach 9 billion people on this planet, creating a pressing need for Africa to increase agricultural productivity to meet rising demands for food.

Large-scale food fortification and Biofortified foods present efficacious, cost-effective, sustainable, scalable solutions to increase micronutrient intake and improve associated health and well-being outcomes.

One of the most cost-effective global development investments, fortifying food has a favorable cost benefit ratio; roughly 1:30 for salt iodization and 1:8 for iron fortification. As part of broad national programmes to reduce chronic malnutrition, fortification can save national economies an estimated 2-3 percent of Gross Domestic Product.¹

Recent estimates suggest, up to 75 additional low- or middle-income countries could benefit from new fortification programmes to improve public health.



However, data on coverage, quality, and impact of existing fortification programmes is limited. Most of this can be linked back to the lack of incentives in fortification for the private sector, innovative ways to build demand for fortified food among consumers, ineffective traceability, challenges in aggregation of biofortified crops, and lacking innovative food vehicles to scale fortification and changes in dietary intake.

Adequate nutrition should not be a privilege in the 21st century

Large-scale food fortification and biofortification are not – individually or together – silver bullets for addressing micronutrient deficiencies, but they present a **golden opportunity** to strengthen food systems through the value chain of foods which may be staple foods, local condiments or other vehicles suitable to delivering healthier diets for all.

In this context, GAIN and partners are embarking on a journey seeking novel solutions in fortification and biofortification, from entrepreneurial leaders and organizations in East and West Africa.

An innovation challenge centered in Africa, stands to prove a powerful catalyst, driving and expediting positive change, promoting healthier diets for all, and addressing nutritional deficiencies on a global scale.

GAIN's Innovation Challenge 2024 : Seeking novel solutions in Fortification and Biofortification

I. Call for Applications

By way of an Innovation Challenge in 2024, GAIN will work with partners to support and scale bold, new solutions to elevate solutions to global hidden hunger in efforts to expedite progress to achieving the Sustainable Development Goals (SDGs) focused on ending hunger.

We are looking for disruptive innovations placed at different points in the value chain that support Fortification and Biofortification, from entrepreneurs and organizations who have dared to think different and devised local solutions that apply to the African context for eliminating malnutrition.

II. Geographic focus of the Challenge:

Open to applicants from countries in East & West Africa countries where GAIN has a country office.

III. Operational Hubs for the Challenge :

GAIN offices in Tanzania and Benin serve as the hubs of the Innovation Challenge

IV. Duration : August 2024 - June 2025

V. Who can apply :

Local entrepreneurs and organizations that are based in East and West Africa and have low or high-tech solutions, business models, digital tools, and other wildcard solutions, already operational and working at any point in the value chain for fortified and biofortified foods and crops.

These must be proven concepts that are operational in the local context, providing some solution to a part of the value chain for food fortification and biofortification.



VI. Categories for Competing in the Challenge :

Category I - Profitable & sustainable business models to fortify:

Industrial fortification is a proven and cost-effective way to add vitamins and minerals to staple foods. However, for instance in Tanzania, up to 95% of the population (over 50 million people) do not benefit from these large-scale food fortification programs as they source their flour primarily from small-scale mills, who lack the capacity to fortify. Incentives to fortify are low along with low consumer awareness, hence we are specifically looking for profitable sustainable business models that can incentivize the miller and identify the barriers and key drivers of success.

Innovations in the fortification business models category will be those that are adding the desired micronutrient in its best quantity and quality, designing efficient machinery, tweaking the existing supply-chain for better consumer orientation, building incentive for the miller to fortify, generating increased consumer awareness on fortified foods, and other similar submissions.

Category II - Aggregation/Segregation conundrum in biofortification

Biofortification is a crop-level intervention which requires least possible external additives to fortify food. This process involves complete agriculture value-chain to be implemented in a highly effective and closely monitored method.

Two key issues that pose the biggest challenges for biofortification are, Traceability (segregation) of the biofortified crops from the conventional crops and Aggregation of the produce (especially from the small marginal produce).

In most instances, the grains or stems from a biofortified crop and the conventional crop look alike, so to segregate fortified produce from conventional ones, is a daunting task. On the other hand, small marginal farmers often grow biofortified and conventional crops side-by-side as they often have small landholdings and predominant agricultural practices. This makes aggregation (of a segregated biofortified produce) challenging. Using traceability standards, digital innovations, novel interventions in farming systems, changes to the farmer and market interaction can lead to solutions, that this category seeks.

Category III - Innovative vehicles for food fortification:

Fortification and biofortification work best when carried out in staple crops/foods/diet components e.g. Salt and Milk are two prominent vehicles for fortification, as these are consumed in large scales. Similarly, crops like Wheat, Rice, Maize, Sweet Potato, Cassava, and Beans are predominantly fortified or biofortified as they can constitute one of the biggest portions of the food plate in these parts of the world. Reaching the largest number of people from some of the most vulnerable sections, and addressing specific micronutrients deficiencies have been the two critical indicators of success for fortification efforts.

While much of the science and technology driving large-scale food fortification is well established, it holds tremendous potential for local innovations. New food vehicles and fortification processes expand the frontiers of 'what is fortifiable' – edible oil, rice, stock cubes, triple-fortified salt, tea and coffee for instance are some of the promising innovations when it comes to foods as vehicles, that can be fortified. Adding to the line of innovative foods and crops as vehicles for food fortification and biofortification, are some of the much-needed, positive disruptions.



VII. Selection Criteria :

A panel of experts on industrial fortification and biofortification, as well as the private and public sector will preside over the decision-making process to select ten innovations that will be adopted for further scale-up and hand-holding.

The expert panel will screen innovations based on parameters such as :

- **Nutritional Benefit:** The extent to which an innovation can be used by food market actors (e.g., consumers, vendors, suppliers etc.) to fortify or enrich at scale and help propel the fight against malnutrition.
- **Generalizability/Scalability:** The extent to which an innovation can be widely adopted, especially in low-resource settings.
- **Complexity:** The degree to which target applicants can elucidate the innovation.
- **Cost effectiveness:** Interventions should consider who their primary end user will be and their ability to purchase or implement the same.
- **Novelty:** The originality or uniqueness of the solution proposed.
- **Sustainability:** The impact of an innovation on planetary health, dietary health, and equity that meet the demands of a resilient food system

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